StreamlineEDU:

A Development of a Web-Based Online Enrollment System for NBS College

A Thesis

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Chapter 1

INTRODUCTION

In today's rapidly evolving digital age, technology has filled every facet of our lives, fundamentally transforming the way work, communicate, and access information. Educational institutions, as critical pillars of society, are no exception to this digital revolution. The traditional paper-based enrollment system that has long been the standard in educational institutions is gradually giving way to more efficient and accessible online enrollment systems. This shift is not only a response to the demands of the digital era but also an essential step in enhancing the overall efficiency, accuracy, and accessibility of enrollment processes.

Online enrollment systems have gained immense popularity in recent years due to their potential to streamline administrative tasks, reduce errors, and offer students and staff a more convenient and user-friendly experience. According to research conducted by the Pew Research Center (Smith, 2016), 77% of Americans own smartphones, making it easier than ever to access online services. Consequently, educational institutions must adapt to this changing landscape to remain competitive and meet the evolving needs and expectations of students and parents.

The development of an online enrollment system represents a significant undertaking, involving a range of technological, logistical, and user-centered challenges. This thesis aims to delve into the complexities and benefits of creating an online enrollment system for NBS College. By analyzing the current enrollment process, identifying its shortcomings, and proposing a well-designed online alternative, this research seeks to provide a solution that will enhance the overall enrollment experience for students, parents, and administrative staff.

This chapter will set the stage for the subsequent chapters, which will explore the existing literature on online enrollment systems, examine the specific needs and requirements of the target institution, discuss the methodology employed in system development, and present the results and implications of implementing the proposed system. Indeed, the shift toward online enrollment systems is both a response to the digital age and an opportunity for educational institutions to improve their efficiency and accessibility. By embarking on the journey of developing an online enrollment system, NBS College aims to stay at the forefront of technological advancements in education, ultimately enhancing the experience of all stakeholders involved.

Background of the Study

The Student Enrollment System is essential to the school to provide a smooth and efficient process of registration. The registrar office currently has no enrollment system to attend the students' inquiry and registration. When you are enrolling for a course you are filling up some of your information on the paper and also the selection of your subjects to take. The school offers five bachelors degree courses, these are Bachelor of Science in Accountancy, Bachelor of Science in Accounting Information System, Bachelor of Science in Computer Science, Bachelor of Science in Entrepreneurship and Bachelor of Science in Tourism Management. There are currently 100 plus enrolled students as of this school year and soon there will be more students who will enroll in the school.

The manual process slows down the registration process of the students and also this will be more work for the registrar's office staff for manual inputting and evaluation of the students. It is a good benefit for the school if you have an efficient enrollment system for fast processing and transaction. This system will also help the registrar office to process the data of the student much faster than the current system.

These problems will be solved using the new enrollment system. This proposed system is web based and can be accessed by the student via website. The enrollment, registration and inquiries are accessible anytime and anywhere for the students without going to the school. As for the administrator and registrar, this will be more efficient for them because they will just review and evaluate the details submitted by the students one click away. The system provides printing of enlisting of students, transcript of records, printing of registration form and plotting of schedules. These features will help the registrar's office do fast transactions, printing and evaluating students.

Objectives of the Study

A. General Objectives

The general objective of the study is to create and develop a streamlined Online Enrollment System for National Book Store College.

B. Specific Objectives

- To have a database of the enrollment system
- To generate a report in the number of students enrolled in each program
- To create a module for editing and creating of student
- To view and set the schedules of the students enrolled
- To create and add curriculum for the year

Scope and Limitation

A. Scope

- This system will use MySQL database and PHP programming language.
- The students will have access on the system.
- The administrator will be the Registrar's Office.
- The Dean and the Program Heads will have access on viewing.
- They can print report of the students registration.

- Mobile responsive and runs on any operating system using a browser.
- A hosting for the website will be available.
- This can store, add, and delete records.
- Does the enlisting of students and plotting of schedules

B. Limitation

- This study is limited only to the NBS College.
- The system does not cover online payments such as tuition fees, etc.
- Not a mobile device application

Significance of the Study

This system is designed to benefit the following individuals or organizations:

Students. This can improve the student experience during the enrollment process and provide the easiest way for the students to enroll.

Registrar's Office. This can lessen the workload of the staff in handling the enrollment process and managing the student enrollment data. It can also help them to minimize the time of gathering student information data.

NBS College. This can reduce the cost like printing and can improve the resources.

Future Researchers. This can be a helpful reference for future researchers who want to conduct a similar project and be an important tool to provide a more efficient way of the enrollment process.

Conceptual Framework of the Study

INPUT

- Analyze and identify all the necessary design and methods to be applied in developing the Web-Based Enrollment System of National Book Store College.
- Define all the required features that should be placed in the system with following:
- 2.1 Username and password
 - 2.2 Student information
 - 2.3 Course information
 - 2.4 Subject information
 - 2.5 Schedule information
- State the development and methodology and tools that are appropriate to the system.
- Provide criteria that is suitable to the system
 - 4.1 Functionality
 - 4.2 Reliability
 - 4.3 Efficiency
 - 4.4 Usability
- Research some process that are related to enrollment system that will contribute to the development of the system.

PROCESS

- Conduct data gathering such as Interview and pinpoint the challenges they are facing.
- Analyze and conceptualized the gathered data to design the desired features and functions of the system using the following software.
 - 2.1 XAMPP
 - 2.2 PHP IDE
- Used Agile model as development methodology with the support of the following:
 - 3.1 ERD
 - 3.2 DFD
 - 3.3 Flowchart
 - 3.4 Pseudocode

Diagram

- Quality assurance activities through different kinds of testing from different respondents
 - 4.1 End-Users
 - 4.2 Registrar
 - 4.3 IT Experts
- Some related system and studies were used to the development of the system. It was used as foundation of the system.

OUTPUT

Web-Based Enrollment System for National Book Store College









EVALUATION



Definition of Terms

These are the following terms used in this system development:

System. It is a set of things working together as parts of a mechanism or an interconnecting network.

Development. It refers to the process of conceiving, specifying, designing, programming, documenting, testing, and bug fixing involved in creating and maintaining applications and system softwares.

Evaluate. It pertains to the making of a judgment about the amount, number, or value of something; assessment.

Records. It is an official list or record, for example of births, marriages, and deaths, of shipping, or of historic places.

Module. It refers to the extension to the main program dedicated to a specific function. A section of the system that is added in as a whole or is designed for reusability.

Computerize. Convert a manual system to a system that is operated or controlled by computer.

Database. It is a systematically structured repository of indexed information that allows easy retrieval, updating, analysis, and output of data.

Web-based System. It provides access to a software system using a computer, internet connection and browser software like Google Chrome or Microsoft Edge.

Data. These are information that is translated into a form that is efficient for movement of processing.

Chapter 2

CONCEPTUAL FRAMEWORK AND RELATED LITERATURE

Review of Related Literature and Studies

This chapter references various literature and studies that explore diverse concepts, comprehension, ideas, generalizations, conclusions, and developments associated with enrollment studies from the past to the present. These sources serve as a valuable guide for researchers in developing their project. Additionally, the inclusion of relevant information in this chapter aids in familiarizing readers with content that aligns with and contributes to the current study.

2.1 Review of Related Literature

Why Develop Online Enrollment Systems

Developing online enrollment systems is essential for streamlining and enhancing the enrollment process. It facilitates efficient and convenient registration, reduces paperwork, minimizes errors, improves accessibility for both students and administrators, and provides real-time data for better decision-making.

According to Matos Jr. (2022), the implemented enrollment system for Higher Education Institution amidst covid-19 Pandemic in Zamboanga Peninsula facilitates the management of enrollment processes for the school's administrative and staff. The use of a prototyping methodology allows for potential improvements to be incorporated based on user suggestions. Specifically, it addresses issues related to conflicts in student schedules and slot availability, especially during peak enrollment periods. Additionally, it resolves the data redundancy problem in the previous database by implementing normalization. Furthermore, the system's code can be easily modified or updated, as changes only need to be made to the server, which automatically updates the entire system. It is recommended to gradually adopt the developed web-based

enrollment system to enhance the enrollment processes, aligning with the progressive nature of the prototyping methodology. This approach eliminates the need for extensive details in the initial data gathering, allowing for the development of the initial system, with further refinement based on user feedback in subsequent evaluations. This approach is particularly beneficial for users with limited experience in using electronic information systems, as it addresses their initial unfamiliarity with the technology.

Matos Jr. also suggested examining the integration of online payment options, such as credit cards, debit cards, or PayPal, to enable students to pay tuition fees and other charges without physically visiting the school, as well as the implementation of an automated Student Advising system that guides students on suitable courses to take or avoid.

According to Caipang and Lee (2013), in their study about "Development of a Computerized Enrollment System in a Rural-based Higher Education System", schools ought to implement an enrollment system to facilitate the efficient and swift retrieval of students' records by the staff.

The current school system relies on manual processes for tasks such as enrollment and record-keeping. Since the inception of the school, these manual methods have been in use. During enrollment, students must visit the admission office to submit the necessary requirements. An evaluator then reviews the students' grades to determine the appropriate subjects for the upcoming school year and assess their status. The evaluator compiles a list of required subjects for each student. Once students receive this list, they proceed to the cashier to pay various fees, including the PTA fee. The cashier issues receipts as proof of payment. At the conclusion of the enrollment period, the person in charge prepares a summary of student enrollments. The manual updating of student records hampers the admission process, as the

enrolling officer spends significant time searching for and locating student records in filing cabinets. Delays in evaluating students occur because the enrolling officer takes time to review students' previous grades, and some records are misplaced. Tallying subjects is also time-consuming due to the lack of organization in student files.

Process Optimization as an Impact of Enrollment Systems

According to Bognot, et al (2021),the enrollment procedure, challenging-to-assess aspect of an institution, proves to be crucial for both students and the institution itself. The existing enrollment process is typically time-consuming and demanding for all involved parties. Their study examines and assesses the current enrollment procedures at Aurora State College of Technology (ASCOT) using an opinion survey approach. The survey will utilize a minimum sample size obtained through stratified random sampling from faculty and staff, students, and parents within the institution. Analysis of the data incorporates percentage calculations, averages, weighted scores, and ranking methods. The findings suggest that there is a need for improvement in the current enrollment process to enhance efficiency, particularly in the context of the ongoing pandemic, benefiting both students and the institution.

Leonar, et. al., on their study Online Enrollment System of Liceo de Cagayan University states that, "The Online Enrollment System was proposed for the enhancement of the current enrollment system of Liceo de Cagayan University. The study aimed at creating a system that would provide another option for enrolling and that would compensate for the school's lack of manpower and timeconsuming system. The database of the system is the dbEnrollment. It contains many tables and stores information such as student's academic records, secretary's files and records, class schedules, pre-requisites, subjects, curricula and other essential data needed in the system. The proposed system caters to old, freshmen, transferees and shiftees with the

following services: subject evaluation, posting of grades, viewing of curriculum, add and update profile. The system lessens the enrollment time, speeds up file management, and minimizes inaccuracies and errors."

Why Schools Should Manage Student Enrollment Online

In an era where budgets face heightened scrutiny, educational institutions need to exert effort in cost reduction while maintaining a standard of excellence in education. Despite the rapid progress of the digital revolution across various sectors, the K-12 school system has experienced comparatively sluggish technological advancement. This lag, according to Keenze (2021), can be attributed significantly to the sheer volume of students and the extensive array of files, forms, and documents that families are required to submit—a workload that schools must subsequently handle and process. An online platform offers a streamlined solution by eliminating the need for physical forms, enabling efficient management of student enrollment in a cost-effective and timely manner. Benefits of online enrollment management systems includes:

- An internet-based registration system consolidates information in a centralized hub, facilitating convenient access and modification.
- The database receives registration details promptly, eliminating the manual entry into a registry.
- This significantly accelerates the registration procedure, allowing employees to focus on tasks that require manual attention.
- Reducing data-entry errors, such as inaccurate addresses and relocated students, enhances overall accuracy.

Based on the researcher, a web-based enrolment system for Ven'tas Parochial School (VPS) in Manila was developed to help its students enroll in a more efficient way without the hassles of waiting long hours in filling out forms, which sometimes become

redundant, or to stand in line and pay at the cashier. It is with the Web-based Enrolment System for VPS that this new style of enrolment may be achieved. This new type of system offers its students newoptions for enrolling at VPS. By logging on to VPS website, one can register and enroll subjects for a school year. With these, all the students are required to fill out certain forms that do not take more than a few minutes to accomplish. The system stores its records in the school database for future references.

Verification of the students' transaction confirmation is required, and tuition fees must be submitted to the school's registrar. Additionally, students have the option to review their current account on the VPS website and consult the school's latest tuition fee rates as listed in Pascual and Riceo (2008).

Binayao (2013) in his article on PhilippineE Journal entitled Web Based Enrollment System with Reservation of Dysas Center for CPA Review, he stated that, "Over the years the population of enrollees exceeds constantly from the anticipated annual growth. During enrollment, vulnerability to errors in book keeping is defined which would consume much time delaying the enrolment process." Whether you signed up for a gym membership or enrolled your child in a summer camp, online enrollment is an easy and effective tool for those who are searching for that instant satisfaction of being "accepted." In today's world, technology has become our number one asset for communicating and for good reason: it saves time, is cost effective, and can give instant feedback.

2.1 Review of Related Studies

A Perspective on the Development of Online Enrollment Systems

In the study of Cierva, M. (2023) about The Bato Institute of Science and Technology Online Enrollment System, the researcher states that it manages student

information, grade reports, enrollment, and billing. It monitors all aspects of a student's academic journey, from the commencement of their course to its completion, with updates every semester, ensuring comprehensive records for future reference. The majority of tasks are computerized, ensuring precision, and backup maintenance is straightforward. The system offers two access modes: administrator and user (staff and student). To evaluate its efficiency, a standardized questionnaire was devised and administered to users, addressing aspects like user-friendliness, speed, and overall satisfaction. Through the analysis of collected data, the researcher concluded that the "Efficiency of the Online Enrollment System" is noteworthy, evidenced by the "very good" survey results. It is advisable to continuously enhance the current system to preempt future issues.

According to Henrickson (2017) in the article "Optimizing the Advantages of Online K-12 Enrollment and Registration," we have seen that web-based enrollment significantly streamlines and accelerates the process for both staff and parents. This benefit extends particularly to students. The article also highlights the financial aspect for schools and districts, pointing out that traditional paper-based enrollment and registration procedures consume a considerable portion of the operational budget. The shift to online enrollment management systems allows schools to allocate more resources to student education instead of spending time on paperwork, manual data entry, and the challenges of retrieving information stored on paper.

Bernas, G. and Habahab, C. (2019) observed that enrollment can be done easier by implementing a proper online enrollment system to lessen if not outright get rid of long queues for enrollment.

In the article titled "Enhancing School Processes with Online Enrollment: A Guide by the CURACABBY TEAM" (2020), three specific advantages of implementing an

Online Enrollment System for students are highlighted: Simplified information gathering, Efficient data management, and Enrollment status monitoring. Regarding the submission of information by students, while the majority of paperwork is typically completed by parents, students in higher grades may also be required to provide details such as academic records, extracurricular interests, and essays. The coordination of information from multiple parents is facilitated through the online enrollment system. Furthermore, students can actively monitor their enrollment status, identifying any outstanding paperwork or information needed, and communicate with their parents accordingly.

According to Hayagan (2022), several universities and colleges had already established online platforms well before the pandemic, incorporating features such as online enrollment systems and electronic learning for virtual classes. However, this mode of learning was given lower priority, as the traditional method of physically attending school for enrollment and face-to-face classes took precedence. The focus on in-person classes stemmed from the belief that they fostered crucial personal interactions, essential for building students' confidence. The onset of the pandemic necessitated a reevaluation of the prevailing education system. The abrupt shift to remote learning confined individuals to their homes, disrupting regular activities and contributing to a global economic downturn. Adherence to safety protocols mandated the adoption of online processes to mitigate the impact. Recognizing the need for an effective solution during the pandemic, there is a call for the prioritization and enhancement of the Online Enrollment System. This becomes especially crucial as students cannot afford to discontinue their education or skip essential courses in the face of the challenges posed by the pandemic.

The development of a robust online system presents advantages for parents, students, and educational institutions alike. By virtue of its online nature, the system can efficiently accommodate new students, current attendees, and returning students, streamlining the enrollment process and providing a convenient means of document submission.

Synthesis

The development of an online enrollment system has been influenced by these various studies, literature, and systems that explore diverse concepts, comprehension, ideas, generalizations, conclusions, and developments associated with enrollment studies. These sources serve as valuable guides for us in developing our project and contribute to the ongoing improvement and refinement of online enrollment systems. The identified studies and literature have contributed to the development of these systems by highlighting their benefits and potential improvements. The benefits of online enrollment systems include efficiency and convenience, cost-effectiveness, accuracy, accessibility, real-time data, and improved user experience. They have also suggested potential improvements to online enrollment systems, such as the integration of online payment options, automated student advising systems, and gradual adoption of the developed web-based enrollment system to enhance the enrollment processes.

They also highlighted its importance in optimizing the enrollment process, managing student information, grade reports, enrollment, and billing, and enhancing school processes. Moreover, they emphasized the need for schools to manage student enrollment online, particularly in the context of the digital world and transition from pandemic, to benefit both students and the institution.

The identified studies and literature have also highlighted the financial aspect for schools and districts, pointing out that traditional paper-based enrollment and

registration procedures consume a considerable portion of the operational budget. They suggested that the shift to online enrollment management systems allows schools to allocate more resources to student education instead of spending time on paperwork, manual data entry, and the challenges of retrieving information stored on paper.

These studies have significantly contributed to the development of our proposed study by providing valuable insights into the benefits and potential improvements of online enrollment systems. They have highlighted the importance of user-friendliness, speed, and overall satisfaction in the design and implementation of such systems. Additionally, they have emphasized the financial advantages of online enrollment systems, as they allow schools to allocate more resources to student education instead of spending time on paperwork and manual data entry.

Furthermore, these studies have identified specific advantages of online enrollment systems for students, such as simplified information gathering, efficient data management, and enrollment status monitoring. By examining the experiences and recommendations of these studies, our proposed study can be refined and improved to better address the needs and challenges of the current enrollment process of NBS College.

Chapter 3

RESEARCH METHODOLOGY

3.1 Project Design

This chapter presents the research design in the developing study and the project development in accordance to the systematic procedures and processes.

3.1.1 Software Architecture

The diagram shown in Figure 3.1 is the actual setup of the system and explains how the system interacts and functions collectively in the infrastructure. The client computer, tablet and mobile phone will connect to the web server or website of the system. The system will validate all the user input data information and the correct format of each input. It will also validate if the user has already submitted the data for duplicate entry validation. Once the data is submitted, it will send information back to the client. If it is successful or not, the user will know what happens after the request. The database serves as the main storage of all the user information data.

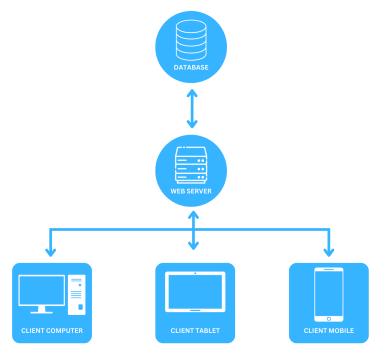


Figure 3.1 - The System Architecture

3.1.2. System Development Life Cycle

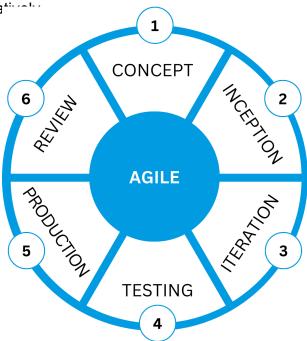


Figure 3.2 - Agile Methodology

Moreover, the Agile structure life cycle is carefully considered and applied to ensure that the researcher builds the system and its needed technology to meet users' requirements and the system functions offered. As a result through these stages, all of the activities and tasks required to scope and define business will be achieved.

Concept

In this phase, the key users and the development team will outline the project scope and concept. Identify requirements, goals and features needed in the system. This will determine if the project is feasible or not. The team will also create a strategy to take the concept into execution. It will Identify requirements, goals and features needed in the system. Interview is essential based on users perspective to keep the system centered around the user.

Inception

This phase will assign roles to the team member and provide the tools necessary for the development. The team will create the mockup of the User Interface (UI) and the Experience (UX) design to enhance the subject's experience. It will also cover the system architecture such as the suitable tools to be used in order to meet the requirement as well as the programming language and system frameworks to be used.

Iteration

This phase is the most important and the longest phase of the development. The development of the system will start and ensure that all the requirements are included and the feedback from the user/s will also be covered. It will also discuss the improvements if there is any feedback or suggestions from the user's end.

Testing

In this phase, the team will conduct the final testing to ensure that the system works as expected and flawlessly. It will cover the different testing types like Unit Testing (UT), System Integration Testing (SIT), User Acceptance Testing (UAT), Regression Test, and Quality Assurance Testing (QAT).

Release

During this phase, after the series of testing to ensure that the system has no error and works perfectly, the system will be implemented and ready to be launched. This phase will offer training so that the users will be familiarized with the system's features and functions.

Review

In this phase, the users will have to provide feedback for other bugs and errors if there are any. Also, the development team will provide some support on the system.

3.1.3. Activity Diagram

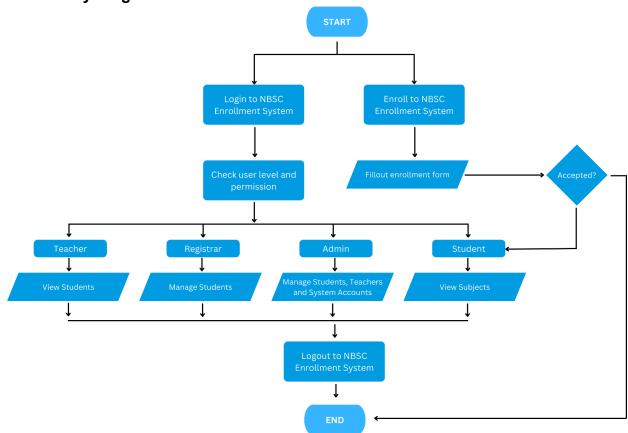


Figure 3.3 - Activity Diagram of the Proposed System

The process begins on two different processes:

The student will enroll on the system to register and to have an account. It will fill
out all the details in the enrollment form to proceed with the enrollment. The

- registrar will check all the details and whether to accept the enrollment or not. If the student is accepted, it will then officially enroll and have an account.
- 2. The student will login to the system and check the user level and permission in the system to filter out the necessary information to show based on the level of the user. Every user has different privileges based on their account type such as the registrar, the teacher, the administrator, and the student.

3.1.3.1 Data Flow Diagram 0

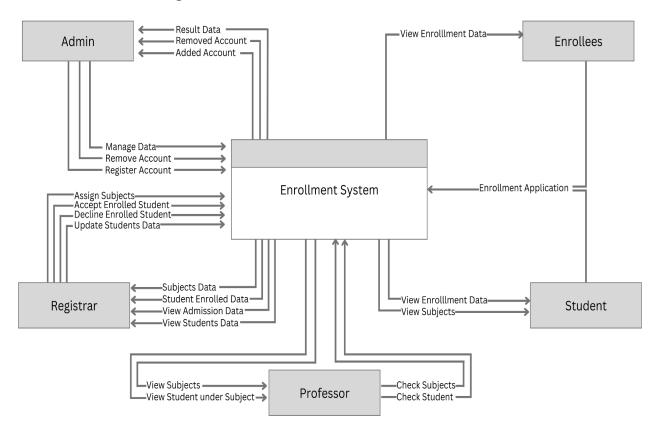


Figure 3.4 - Data Flow Diagram 0 of the Online Enrollment System

The figure above shows the phases of the Data Flow Diagram (DFD), which is the decomposition (i.e. breakdown) of NBS College Enrollment System process.

3.1.3.2 Data Flow Diagram 1

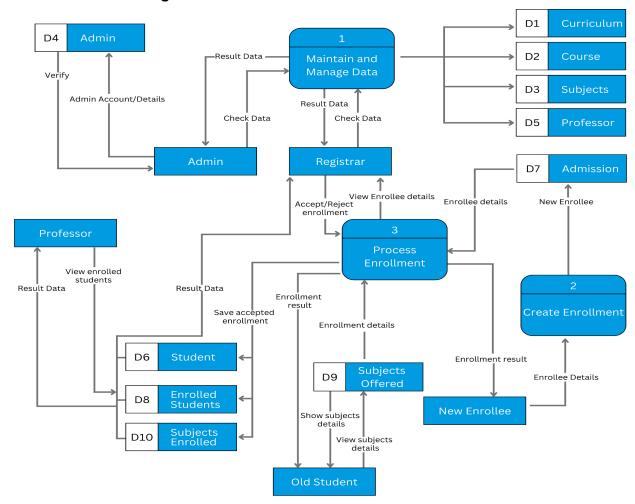


Figure 3.5 - Data Flow Diagram 1 of the Online Enrollment System

The figure above shows the ten (10) tables and how the whole system process works from new enrollee and student who wants to enroll on the system. The new enrolled will first log to the admission table for the processing of the registrar. The old students can view the subjects offered for the year and can select these subjects to enroll. The registrar is the main processor of the system who can see the admission details and process the enrollment of the old and new students. They are also able to accept or reject enrollment of the student. The professor can view the subjects that are assigned to them and the students under them. The admin can view and maintain the accounts of the users.

3.1.4. SWOT Analysis

The SWOT analysis for this study identifies key internal and external factors that can impact the system's success. It also provides a comprehensive overview of StreamlineEDU, assisting in strategic planning and decision-making for the successful implementation and evolution of the web-based enrollment system at NBS College.

3.1.4.1 SWOT Analysis Diagram

STRENGTHS

Efficiency and Time-Saving

It streamlines the entire enrollment process, reducing manual efforts and saving time for both students and administrative staff.

Accurate Data Management

With a database for data storage, the system ensures accurate and organized information, minimizing errors and improving data integrity.

Accessibility and Convenience

It provides accessibility to users from anywhere with an internet connection, enhancing convenience for both students and administrators.

Real-time Updates

The system allows for real-time updates and notifications, ensuring that both students and staff are informed promptly about any changes or important announcements.

Customization and Scalability

The web-based nature of the system facilitates easy customization based on the college's evolving needs. It can also scale to accommodate a growing number of users and data.

WEAKNESSES

Dependence on Internet Connectivity

Its effectiveness relies heavily on stable internet connectivity. Poor or unreliable internet connections may hinder the enrollment process.

Security Concerns

Such systems are susceptible to cybersecurity threats. Ensuring robust security measures is crucial to protect sensitive student information from unauthorized access or data breaches.

Learning Curve

Implementing a new system may require training for both staff and students. Some users may find it challenging to adapt to the new technology, initially slowing down the enrollment process.

Technical Issues

Such systems encounter technical giltches, downtimes, or compatibility issues with certain browsers, potentially causing disruptions during critical enrollment periods.

Cost of Implementation

The initial investment in developing and implementing this system may be significant. This includes not only software development costs but also training expenses for staff.

OPPORTUNITIES

Market Expansion

The successful implementation of the system can attract positive attention and potentially increase the college's enrollment, reaching a wider audience.

Integration with Other Systems

The web-based nature allows for integration with other educational systems, such as learning management systems or financial aid platforms, enhancing overall administrative efficiency

Continuous Improvement

Feedback from users can be used to make continuous improvements to the system, ensuring it stays aligned with the evolving needs of both students and administrators.

Data Analytics for Decision Making

The stored data can be leveraged for analytics, providing valuable insights that can aid in strategic decision-making for the college.

Partnerships with Education Platforms

Collaboration with other online educational platforms or services can open up opportunities for the college to enhance its online presence and offerings.

THREATS

Competitive Technological Advances

Rapid advancements in technology may lead to the emergence of more advanced and competitive enrollment

Regulatory Changes

Changes in education regulations and compliance requirements may necessitate updates or modifications to the system, posing challenges for the college to stay compliant.

User Resistance

Some students or staff may resist the transition to a web-based enrollment system, creating resistance and potential pushback that could impact the system's effectiveness.

Data Privacy Regulations

Stringent data protection laws may pose challenges in terms of compliance, and non-compliance could result in legal consequences and reputational damage for the college.

Economic Factors

Economic downturns or budget constraints may impact the college's ability to maintain or enhance the system, potentially leading to operational challenges.

3.1.5. Entity-Relationship Diagram

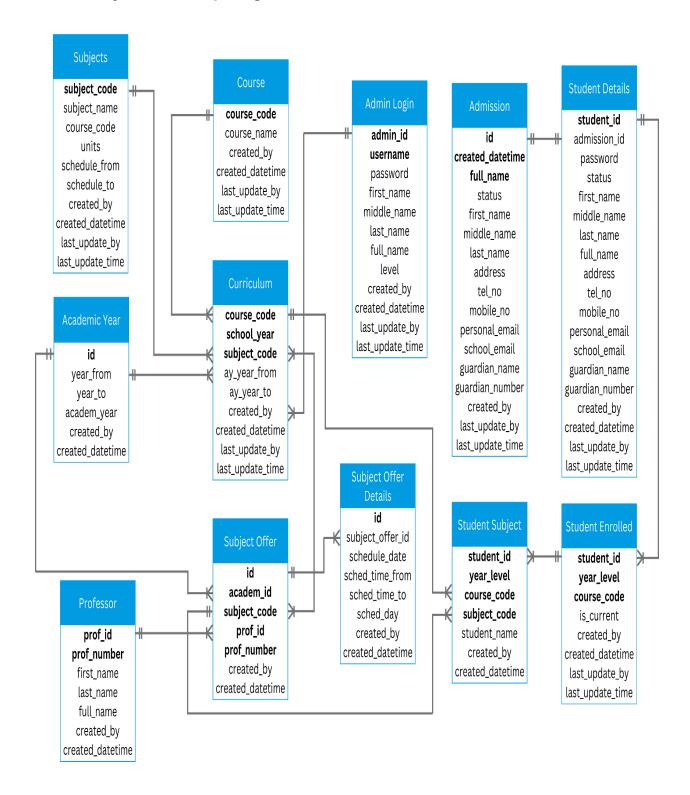


Figure 3.7 - Entity Relationship Diagram

The figure above shows the Entity-Relationship Diagram of the system. It starts with the maintenance of all the entries of the tables like academic year, professor,

subject, courses and curriculum by the administrator and registrar. The administrator can set up the curriculum for the specific academic year and it will save on the curriculum table. The course and subject table is connected to the curriculum table to set up the subject offer table to view by the students. The admission table is where all the new students and not yet officially enrolled students are saved. If the student is officially enrolled, the details will be transferred to the student details table where the student id or number will be generated. Then the student can select the subjects that have been set up and enroll on that specific subject. Upon completion of the enrollment the data is saved in student enroll and student subject table for the recording of data. The student enroll table will insert another record for the student if the student goes to higher year level.

3.1.6. Use Case Diagram

The use case diagram of all the users is presented in Figure 3.8. The old and new students' process is the same but the new student has registration. The new student will register their account upon enrollment and fill out the registration form. The old student will no longer fill out the registration because they are already registered. These users can both select to enroll in a course, select subjects of the course and drop subjects if they want to. These are included in their user access. The Professor account can view the students under the subjects that are assigned. The Registrar account can do all the processes related to the students. This account can also view students under a professor, create a subject schedule, lists the course and subjects offered, can edit and manage course and subjects, accept and reject students, edit the students records and view the list of students enrolled. The Administrator account can do all of the process of the users.

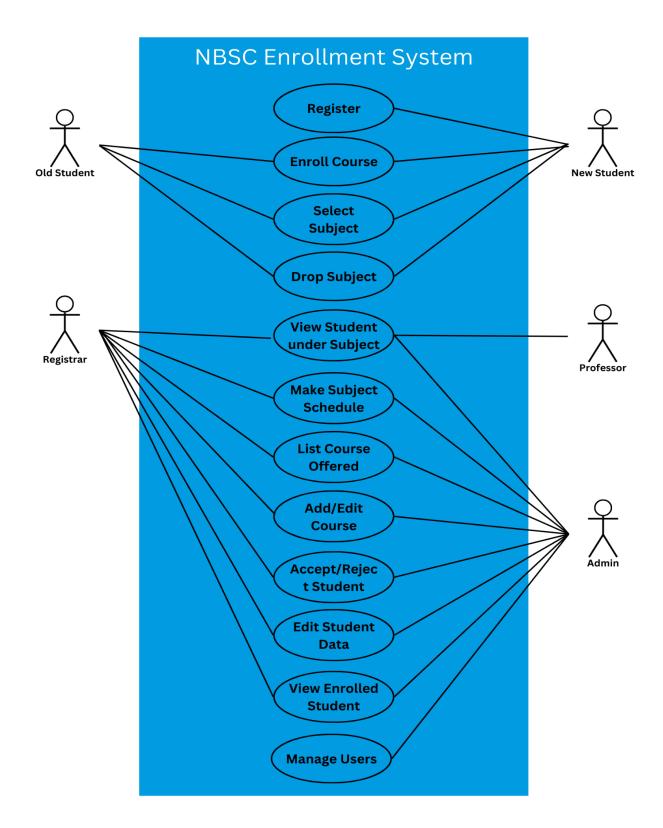


Figure 3.8 - Use Case Diagram

This diagram shows the scope of each user in the developed system.

3.1.7 Fishbone Diagram

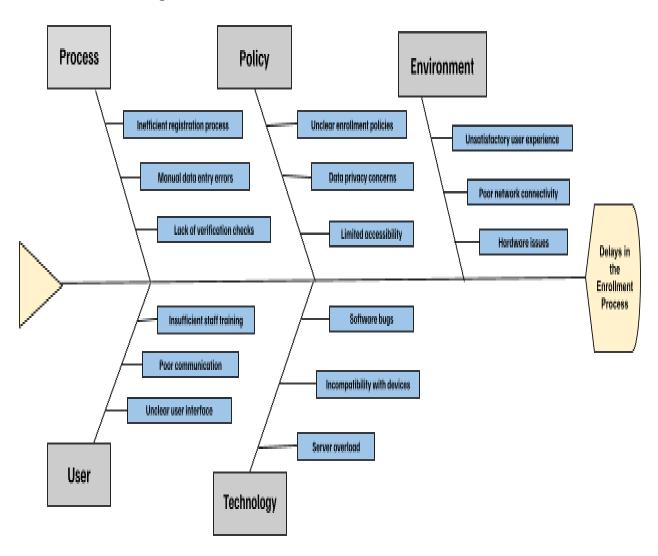


Figure 3.9 - Fishbone Diagram of Online Enrollment System

This diagram shows the cause-effect relationship among the aspects related to the development and the delays in the enrollment process of NBS College. By being aware of these causes, the system will be tailored to successfully meet the requirements of our subjects.

3.2 Procedures

- Inquiry The process that aims to collect and gather data and information. The
 researchers gather data by asking questions and conducting interview to the
 people who are involved in the study.
- Internet Research The researchers looked over the Internet to gather more details and data regarding the study.
- 3. Interview Conversation between the interviewer and the interviewee, where questions are asked by the interviewer to obtain information from the interviewee.
 The researcher conducted an interview to learn and specify the problems.
- **4. Brainstorming** The researchers discussed how to develop the study and analyze possible problems that may be encountered in the study and improve it.
- 5. Consultation The researchers used this method to consult their adviser and coordinators to know their suggestions and recommendations that may help to the development and improvement of the system.

3.2.1 Subject of the Study

The researchers would like to test the application with NBS College students coming from all programs. A total of forty (40) participants will be asked to join the testing. Thirty (30) selected students are going to be asked to evaluate the system. Among the users mainly consists of the NBS College Registrar's Office, which two (2) officers will be testing the system. The four (4) Program Heads along with one (1) College Dean are also joining to evaluate the developed system. Three (3) selected NBS College Faculty will also become participants in evaluating the Online Enrollment System.

3.4 Calendar of Activities (Gantt Chart)

List of Activities	Se	September					October					November				December				uary	,	February				March					April				May				June			
	1	2	3	4	1	L :	2 3	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Constructing Thesis Title		Г			Т			T																								П								П	Г	
Creating Template																																										
Discussed Proposal Template																																										
Discussed Title Defense					T			T									Т		Г					\neg					\neg			П							П	П	Г	
Title Defense																																T							П			
Discuss Chapter 1																																								П	Г	
Adviser's Confirmation								T											Г					\neg		T		\neg	\neg			П							П	П	Г	
Meeting with the Registrar																																T							П			
Data Gathering				П	ı																								\neg			П							П	\Box	Г	
Compile Gathered Data																																T							П			
Adviser's Consultation																																T							П	\Box		
Registrar Consultation		Г			Т			\top																\neg					\neg			\neg							П	П	Г	
Chapter 1-3 Final Defense																																T							П			
Creating the System																																							П	П	Г	
System Testing		Г			T			1																															П	П	Г	
Survey "analysis and interpretation"					T			T																						1											Г	
Testing and survey with IT Expert			Т		T	Т		T																\neg	T	T		\exists	\exists			\exists								\Box	Г	
Chapter 1-5 Final Defense		Г			T			1									T								1				\neg			T										

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